

Amendments to the Claims

Claim 1 (Previously presented): Seed of maize inbred line designated PH6ME, representative seed of said line having been deposited under ATCC Accession No. PTA-4529.

Claims 2-49 (Canceled)

Claim 50 (New): A maize plant, or a part thereof, produced by growing the seed of claim 1.

Claim 51 (New): The maize plant of claim 50 wherein said plant has been detasseled.

Claim 52 (New): A tissue culture of regenerable cells produced from the plant of claim 50.

Claim 53 (New): Protoplasts produced from the tissue culture of claim 52.

Claim 54 (New): The tissue culture of claim 52, wherein cells of the tissue culture are from a tissue selected from the group consisting of leaf, pollen, embryo, root, root tip, anther, silk, flower, kernel, ear, cob, husk and stalk.

Claim 55 (New): A maize plant regenerated from the tissue culture of claim 52, said plant having all the morphological and physiological characteristics of inbred line PH6ME, representative seed of said line having been deposited under ATCC Accession No. PTA-4529.

Claim 56 (New): A method for producing an F1 hybrid maize seed, comprising crossing the plant of claim 50 with a different maize plant and harvesting the resultant F1 hybrid maize seed.

Claim 57 (New): A method of producing a male sterile maize plant comprising transforming the maize plant of claim 50 with a nucleic acid molecule that confers male sterility.

Claim 58 (New): A male sterile maize plant produced by the method of claim 57.

Claim 59 (New): A method of producing an herbicide resistant maize plant comprising transforming the maize plant of claim 50 with a transgene that confers herbicide resistance.

Claim 60 (New): An herbicide resistant maize plant produced by the method of claim 59.

Claim 61 (New): The maize plant of claim 60, wherein the transgene confers resistance to an herbicide selected from the group consisting of: imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.

Claim 62 (New): A method of producing an insect resistant maize plant comprising transforming the maize plant of claim 50 with a transgene that confers insect resistance.

Claim 63 (New): An insect resistant maize plant produced by the method of claim 62.

Claim 64 (New): The maize plant of claim 63, wherein the transgene encodes a *Bacillus thuringiensis* endotoxin.

Claim 65 (New): A method of producing a disease resistant maize plant comprising transforming the maize plant of claim 50 with a transgene that confers disease resistance.

Claim 66 (New): A disease resistant maize plant produced by the method of claim 65.

Claim 67 (New): A method of producing a maize plant with decreased phytate content comprising transforming the maize plant of claim 50 with a transgene encoding phytase.

Claim 68 (New): A maize plant with decreased phytate content produced by the method of claim 67.

Claim 69 (New): A method of producing a maize plant with modified fatty acid metabolism or modified carbohydrate metabolism comprising transforming the maize plant of claim 50 with

a transgene encoding a protein selected from the group consisting of stearyl-ACP desaturase, fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme.

Claim 70 (New): A maize plant produced by the method of claim 69.

Claim 71 (New): The maize plant of claim 70 wherein the transgene confers a trait selected from the group consisting of waxy starch and increased amylose starch.

Claim 72 (New): A maize plant, or part thereof, having all the physiological and morphological characteristics of the inbred line PH6ME, representative seed of said line having been deposited under ATCC Accession No. PTA-4529.

Claim 73 (New): A method of introducing a desired trait into maize inbred line PH6ME comprising:

(a) crossing PH6ME plants grown from PH6ME seed, representative seed of which has been deposited under ATCC Accession No. PTA-4529, with plants of another maize line that comprise a desired trait to produce F1 progeny plants, wherein the desired trait is selected from the group consisting of male sterility, herbicide resistance, insect resistance, disease resistance and waxy starch;

(b) selecting F1 progeny plants that have the desired trait to produce selected F1 progeny plants;

(c) crossing the selected progeny plants with the PH6ME plants to produce backcross progeny plants;

(d) selecting for backcross progeny plants that have the desired trait and physiological and morphological characteristics of maize inbred line PH6ME listed in Table 1 to produce selected backcross progeny plants; and

(e) repeating steps (c) and (d) three or more times in succession to produce selected F<sub>n</sub> and backcross progeny plants that have the desired trait and physiological and morphological characteristics of maize inbred line PH6ME listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

Claim 74 (New): A plant produced by the method of claim 73, wherein the plant has the desired trait and all of the physiological and morphological characteristics of maize inbred line PH6ME listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

Claim 75 (New): The plant of claim 74 wherein the desired trait is herbicide resistance and the resistance is conferred to an herbicide selected from the group consisting of: imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.

Claim 76 (New): The plant of claim 74 wherein the desired trait is insect resistance and the insect resistance is conferred by a transgene encoding a *Bacillus thuringiensis* endotoxin.

Claim 77 (New): The plant of claim 74 wherein the desired trait is male sterility and the trait is conferred by a cytoplasmic nucleic acid molecule that confers male sterility.

Claim 78 (New): A method of modifying fatty acid metabolism, phytic acid metabolism or carbohydrate metabolism in maize inbred line PH6ME comprising:

(a) crossing PH6ME plants grown from PH6ME seed, representative seed of which has been deposited under ATCC Accession No. PTA-4529, with plants of another maize line that comprise a nucleic acid molecule encoding an enzyme selected from the group consisting of phytase, stearyl-ACP desaturase, fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme;

(b) selecting F1 progeny plants that have said nucleic acid molecule to produce selected F1 progeny plants;

(c) crossing the selected progeny plants with the PH6ME plants to produce backcross progeny plants;

(d) selecting for backcross progeny plants that have said nucleic acid molecule to produce selected backcross progeny plants, and

(e) repeating steps (c) and (d) three or more times in succession to produce selected fourth or higher backcross progeny plants that comprise said nucleic acid molecule and have all of the physiological and morphological characteristics of maize inbred line PH6ME listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

Claim 79 (New): A plant produced by the method of claim 78, wherein the plant comprises the nucleic acid molecule and has all of the physiological and morphological characteristics of maize inbred line PH6ME listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.